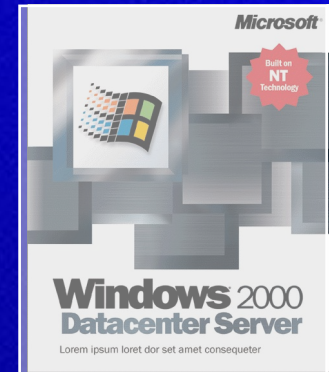
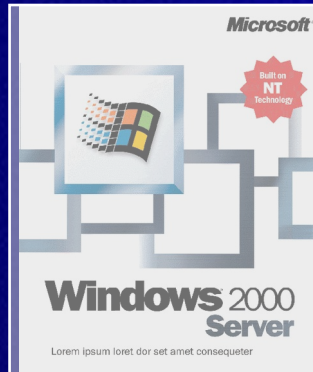


Windows 2000 Professional Overview

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Windows 2000 Family



Windows 2000

- ◆ **Professional**
This talk covers Windows 2000 Professional
- ◆ **Important to think about difference between Windows 2000 family**
- ◆ **Professional = Replacement for all desktop versions of Windows in organizations**
- ◆ **If you're not deploying server or infrastructure, still think about**

Windows 2000 Professional “Big Picture”

Best features of Win98

- **PnP, ACPI, USB, 1394, DX6, integrated browser/shell**
- ◆ **Broad driver support**
 - **Display, Sound, Printer, Digital Cameras, Scanners, NIC, etc.**
- ◆ **Enhanced ease-of-use**
 - **Shell, Network UI, Fewer config reboots, IE5**
- ◆ **Lowest Total Cost of Ownership**
 - **SFP, Setup Manager, SysPrep, Windows installer, WMI, WBEM**
- ◆ **NT's traditional power**
 - **Better Reliability, Security, Performance**

Windows 2000 Professional System Requirements

Windows 2000 will have better performance than NTW4 on same hardware if enough RAM

- ◆ **Minimum Hardware**
 - **CPU: Intel-based Pentium-compatible 133 MHz or higher (Supports 2-way SMP)**
 - **RAM: 64 MB of RAM recommended**
 - **Hard Disk: approx 650 MB free**
- ◆ **New PCs: Windows 2000 “Ready” Program**

Setup Design Goals

- ◆ **Simple and Reliable**
- ◆ **Preinstall/deployment-friendly**
 - **More customization options**
 - **Reduce deployment time**
 - **Support disk duplication**
 - **Ensure installation process can be 100% automated**
 - **Provide tools and features that make the deployment process easier**

◆ **Customizable Deployment**

Deployment Options

- ◆ **Upgrade**
 - Windows 9x or Windows NT 4 “in place”
- ◆ **Unattended Script**
 - Setup Manager tool
- ◆ **Disk Duplication - Sysprep**
 - + Fast
 - - User data and settings
- ◆ **Remote Install Service (RIS)**
 - Requires Windows 2000 Server
 - Boot from floppy or NIC
 - RiPrep - Sysprep for Remote Install
- ◆ **Systems Management Server**

Upgrading

- ◆ **Windows NTW: 3.51, 4.0**
 - Smoothest upgrade: NTW 4.0
- ◆ **Windows 9x: All Released Versions***
- ◆ **Pre-upgrade check**
 - Hardware and Software compatibility
- ◆ **Preserve system and user state**
 - File system, drive letters, user accounts
- ◆ **Provide extension mechanism for ISVs and corporate developers**
 - http://premium.microsoft.com/msdn/library/sdkdoc/win9xmig/migext_34x1.htm
- ◆ **Caveat: Upgrading is never easy or perfect!**
 - * Windows 95 Original, OSR-1/SP1, OSR-2, OSR 2.1, OSR 2.5, Windows 98 & SE, etc.*

Safe Boot

- ◆ **Similar to the Windows 95/98 feature**
 - **Accessed using the F8 key**
- ◆ **Boot modes**
 - **Safe Mode**
 - **Safe Mode with Networking**
 - **Safe Mode with Command Prompt**
 - **Last Known Good Configuration**
- ◆ **Visual cues and environment variable are set in Safe Mode**

Command Console

- ◆ **Allows a local administrator to access a failed Windows NT installation for repair purposes (FAT or NTFS partitions)**
- ◆ **Eliminates the need to have FAT on boot partitions for recovery purposes**
 - **Commands include Format, Fdisk, etc.**
- ◆ **Enabled through:**
 - **Winnt32 /cmdcons on a running system**
 - **Normal: F10 key at the beginning of text mode Setup**
- ◆ **Not an OS environment - Can't run**

Shell Enhancements -

1

Next generation web integration (IE 5.01)

- ◆ Adaptive Menus

- New Balloon Help makes more discoverable

- ◆ New File Open and Printer dialogs

- File Open - FTP and Web (HTTP)
- Printer - Add New Printer Wizard

- ◆ Enhanced My Documents

- Single primary document location
- My Pictures Folder

- ◆ Find Files, Folders

- ◆ Enhanced My Network Places

- ◆ Interactive Add/Remove Programs wizard

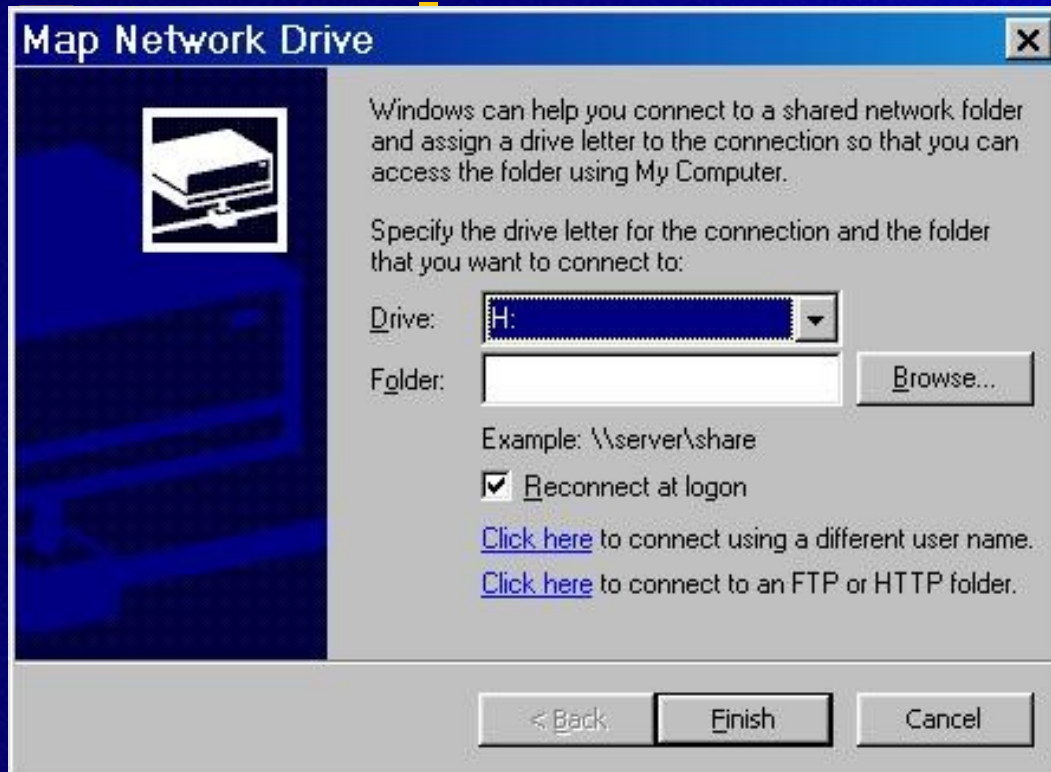
Shell Enhancements -

2

AutoComplete

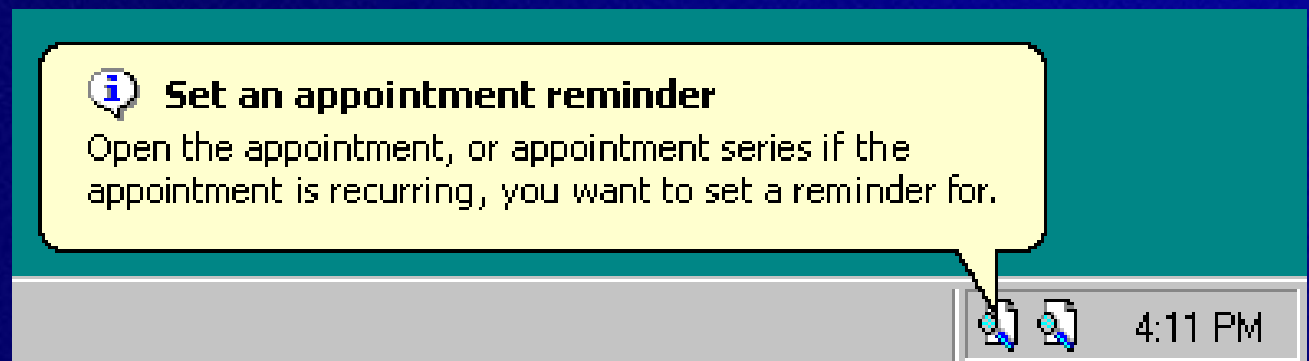
- ◆ **Explore Folders Button**
- ◆ **Consistent Namespace**
- ◆ **Inactive Window Object Selection**
- ◆ **Document History**
- ◆ **Thumbnails**
- ◆ **File Associations/ Open With**
- ◆ **SuperHidden Files**
- ◆ **Disk Cleaners**
- ◆ **Sync Manager**
- ◆ **Common Controls**
- ◆ **Alpha Blending**
- ◆ **Keyboard Cue Suppression**
- ◆ **HTML Help**
- ◆ **Balloon-Shaped Tooltips**
- ◆ **Tahoma Font**

Shell Enhancements



Map Network Drive

Balloon n Tooltips

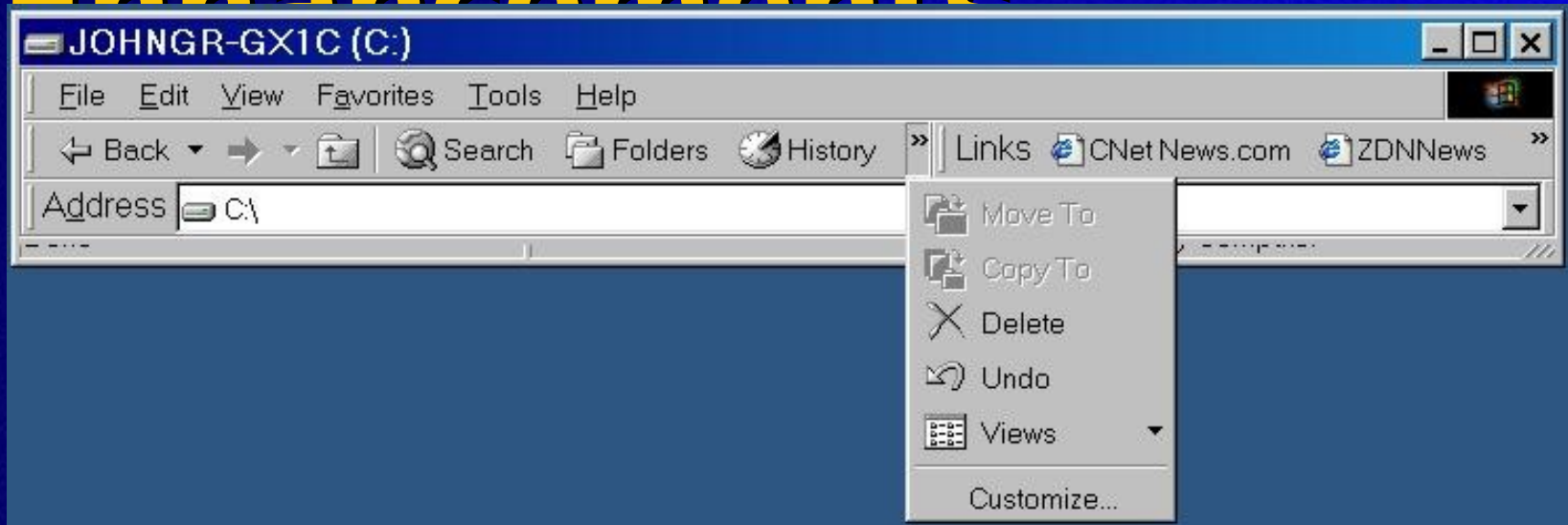


New File Association



- ◆ **Windows tracks the applications you use**
- ◆ **Quick access to the most used apps**
- ◆ **Open With is always available**
- ◆ **Friendly names**
- ◆ **Only relevant apps**

Toolbar Enhancements



- ◆ Customizable
- ◆ Resizable
- ◆ Double-arrows when not enough room

Demos

AutoComplete
Adaptive Menus
FileOpen
Local Search
Namespace

Storage And Storage Management

- ◆ **FAT32**
- ◆ **NTFS v5**
 - **File security**
 - **Property Sets**
 - **Disk Quotas**
 - **Improved volume management**
- ◆ **Universal Disk Format (UDF)**
- ◆ **Disk Defragmentation**
- ◆ **Backup**

Multi Language User Interface

- ◆ **On demand user interface language**
- ◆ **Supports over 60 languages**
 - **Can create, view, edit and print in any of the 60 languages**
- ◆ **Roams with user via User Profiles**
 - **Requires MUI system**
 - **Works with Terminal Server**
- ◆ **Cannot upgrade existing NTW4 localized version to MUI**
 - **Need to wipe and load**

Windows 2000 Multilanguage Technology

Options by version (1 of 2)
Enabling Input, view, print in over 60 languages

- **Standard English version**
- **Localized version**
- **New Multilanguage version**
- ◆ **Full Localized UI: Menus, Help Files, Folder Names**
 - **Localized version**

Windows 2000 Multilanguage Technology

Options by version (2 of 2)
**Switch UI to any language with 90%
localization, including Menus, Dialog
Boxes, Help files**

- **New Multilanguage version**
- ◆ **Manage only one OS, in IT environments
needing multiple UI language support**
 - **New MultiLanguage version**
- ◆ **Deploy only one Service Pack in IT
environments needing multiple UI
language support**
 - **New MultiLanguage version**

Windows 2000 Multilingual Options

<i>User, Org Scenarios</i>	<i>English UI OK, Seldom need Multilingual exchange</i>	<i>Only need one Non- English language UI</i>	<i>Deploy, support multiple UI environs</i>
Standard English Version	<input checked="" type="checkbox"/>		
Localized Version		<input checked="" type="checkbox"/>	
Multi- Language Version			<input checked="" type="checkbox"/>

Performance

Working set enhancements Improvements

- ◆ Registry caching
- ◆ Merging process, services and thread pools
- ◆ Enhancing impact of drivers on performance
- ◆ TCP/IP Stack optimization
- ◆ Reduce periodic system activity
- ◆ Improve handling of small working sets and more balance across processes
- ◆ Boot and shut-down time

Reliability And Supportability

SP4 and Windows 2000

- ◆ **Special Pool Fixes**
 - ◆ **Technique/tool to find pool corruption**
 - ◆ **Fixed problems in cache manager, memory manager, NDIS, Win32k, NTWRDR**
 - ◆ **Better device drivers and anti-virus filters**
- ◆ **Memory leak fixes for ~20 different cases**
 - ◆ **Reduced paged pool fragmentation**
 - ◆ **Winlogon hang fix**
 - ◆ **Eliminated hangs on 16-bit file copies**
 - ◆ **Chkdsk faster than SP3**

Reliability And Supportability

Windows 2000

- Eliminated 75 OS reboot scenarios and some app reboot scenarios**
- ◆ Job object protects against application memory leaks**
- ◆ Driver Improvements**
- ◆ DDK: better tools & sample code**
- ◆ Drv Signing flags non-logo'd drivers (Opt)**
- ◆ Runtime “driver verifier” feature to stress suspect drivers**

Reliability And Supportability

Windows 2000

“Safe mode boot” - minimal drivers

- ◆ **Command Console boot**
- ◆ **Kernel-only Crash Dumps**
- ◆ **Faster dumps on large RAM**
- ◆ **Kernel-mode Write Protection**
 - prevents bugs from overwriting read-only kernel code and data
- ◆ **Faster Chkdsk: faster than NT4 SP4**
- ◆ **File System Enhancements**
 - User disk quotas for NTFS
 - Can dynamically grow NTFS partitions

Hardware

- ◆ **Support new standards**
 - **ACPI**
 - **Universal Serial Bus (USB)**
 - **IEEE 1394**
 - **Multiple Display Support**
 - **DVD**
 - **Advanced Graphics Port**
 - **Win32 Driver Model (WDM)**
- ◆ **Hardware Compatibility List - important**
- ◆ **More legacy device support than NTW4, including printers, scanners**

What ACPI Enables...

- ◆ **Both power management and Plug and Play in Windows 2000**
- ◆ **Integrates system board devices into driver-based device power management**
- ◆ **Improves Plug and Play support**
 - **More flexible device ejection and resource configuration**
- ◆ **Improves robustness**
 - **Power management policy is coded once in operating system, not in every BIOS**
 - **Control code is executed within the operating system environment**
- ◆ **Eases development**
 - **Standard components; drivers and chipsets**
 - **Abstract and flexible: Hardware can evolve without software changes (and vice-versa)**

Mobile Platform

- ◆ **Power Management**
 - **APM Support for legacy machines**
 - **ACPI with new machines**
- ◆ **Hibernate/Resume**
- ◆ **IR File Transfer**
- ◆ **Offline Folders**
 - **Makes network files available when fully disconnected from the corporate network**
 - **Namespace the same online and offline**
 - **Work on mapped network drives or UNC paths while offline**
 - **Files accessed on SMB-based servers can be automatically cached locally**
 - **Caching is done by the SMB Redirector**

Security

- ◆ **Kerberos Authentication**
- ◆ **IP Security (IPSEC)**
- ◆ **Smart Card Authentication**
- ◆ **Security Configuration Editor**
- ◆ **Encrypting File System (EFS)**
 - **Complete protection for sensitive files and directories**
 - **Encrypt and decrypt from the Explorer**
 - **Attribute on Folder Properties**
 - **Command line tool - cipher.exe**
 - **Transparent to applications**

Simplified Networking

- ◆ **Ease of Use**
 - **TCP/IP installed by default**
 - **Auto address allocation**
 - **Simplified UI for LAN and RAS**
- ◆ **Reduced Admin Cost**
 - **MMC tools for RAS, DHCP, DNS**
 - **Automatic DNS update by DHCP**
 - **Diagnostics Support using WMI**
- ◆ **Plug and Play and Power Management**
 - **Dynamic load/unload of stacks**
 - **No power down if net in use**
 - **Wakeup on directed traffic (WOL)**

Improved Connectivity Options

- ◆ **Remote Access**

- **EAP, RADIUS, BACP**

- ◆ **Enhanced VPN Services**

- **L2TP**

- ◆ **Routing**

- **Multicast forwarding, IGMP proxy**

- **Internet Connection Sharing**

Network Communications Enhancements

TCP/IP performance and security

- Large Window, SACK, roundtrip estimation
- IPSEC and ISAKMP

◆ Network Quality of Service (QOS) support

- Multimedia
- Network resource management

◆ NDIS 5.0 improvements

◆ Native ATM support

◆ Network as multimedia source/sink

◆ TAPI 3.0, NetMeeting 3.01

◆ Internet Printing

◆ Network Interoperability

- Novell NetWare, Services for Unix (Add-on)

Local Machine Management

Windows Installation Service

- **Is a local service (Does not require server)**
- **Prevents .DLL-hell and enables application life-cycle (installation, repair, upgrade, remove)**

◆ System File Protection

◆ Workstation-specific tools are MMC snap-ins

- **Computer Management Snap-in**

◆ “Run As” - Secondary logon for performing administrative functions

◆ Diagnostic booting options

- **Safe Mode / Last good / Debug mode / Command Console**

Where do you want to go **today?**

Microsoft®